

surrounding environment, and the system is controlled by a microprocessor.

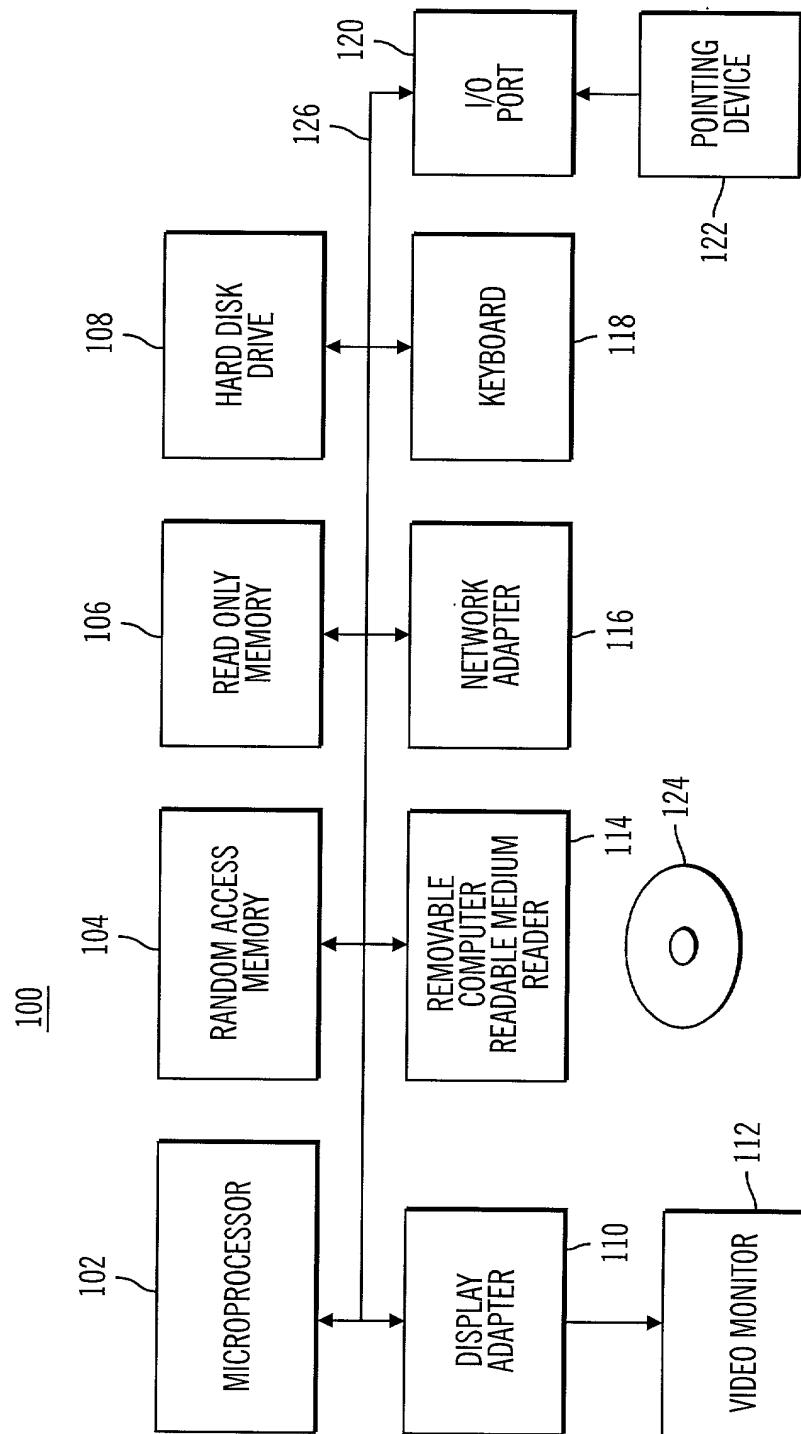


FIG. 1

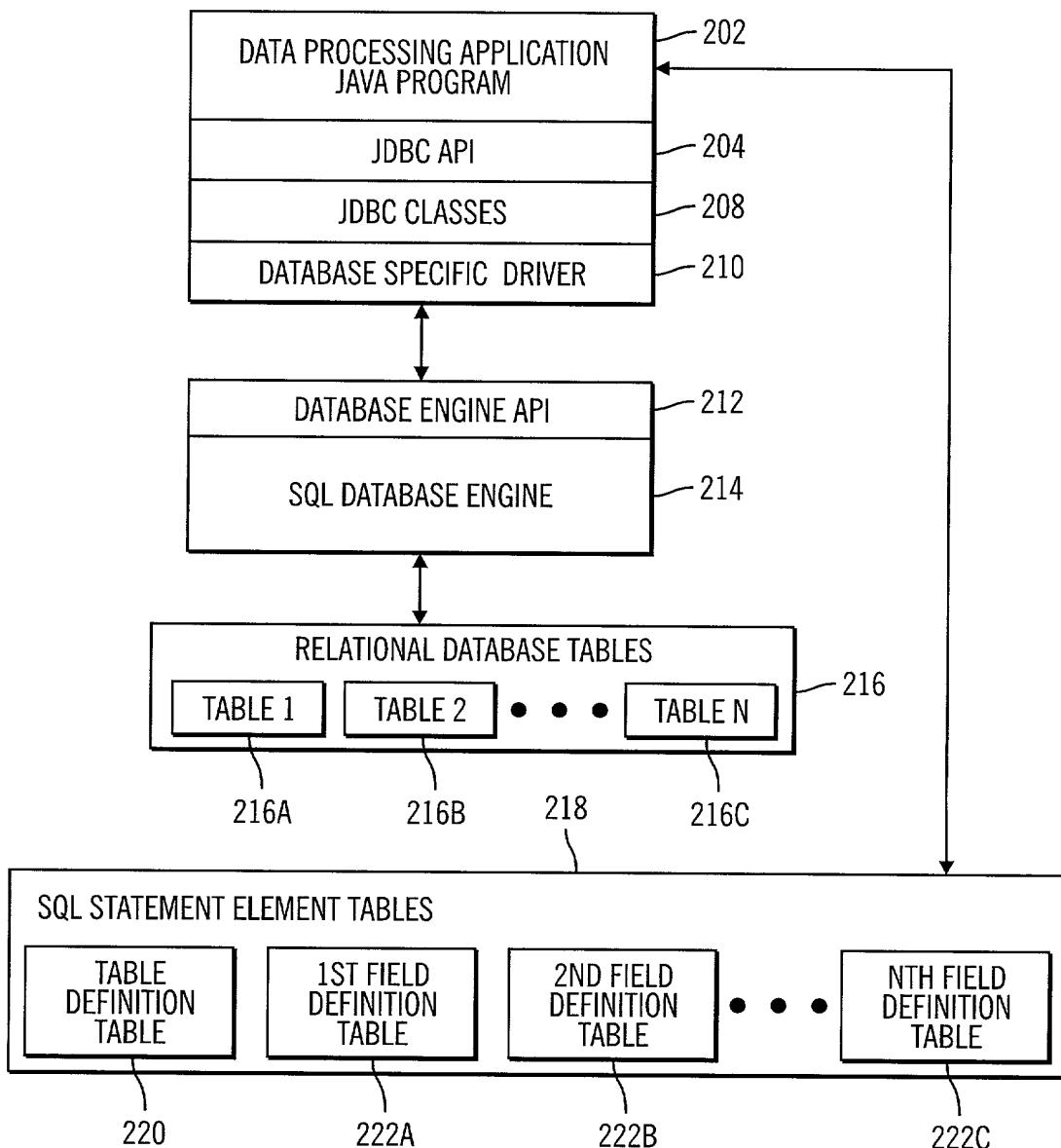
200

FIG. 2

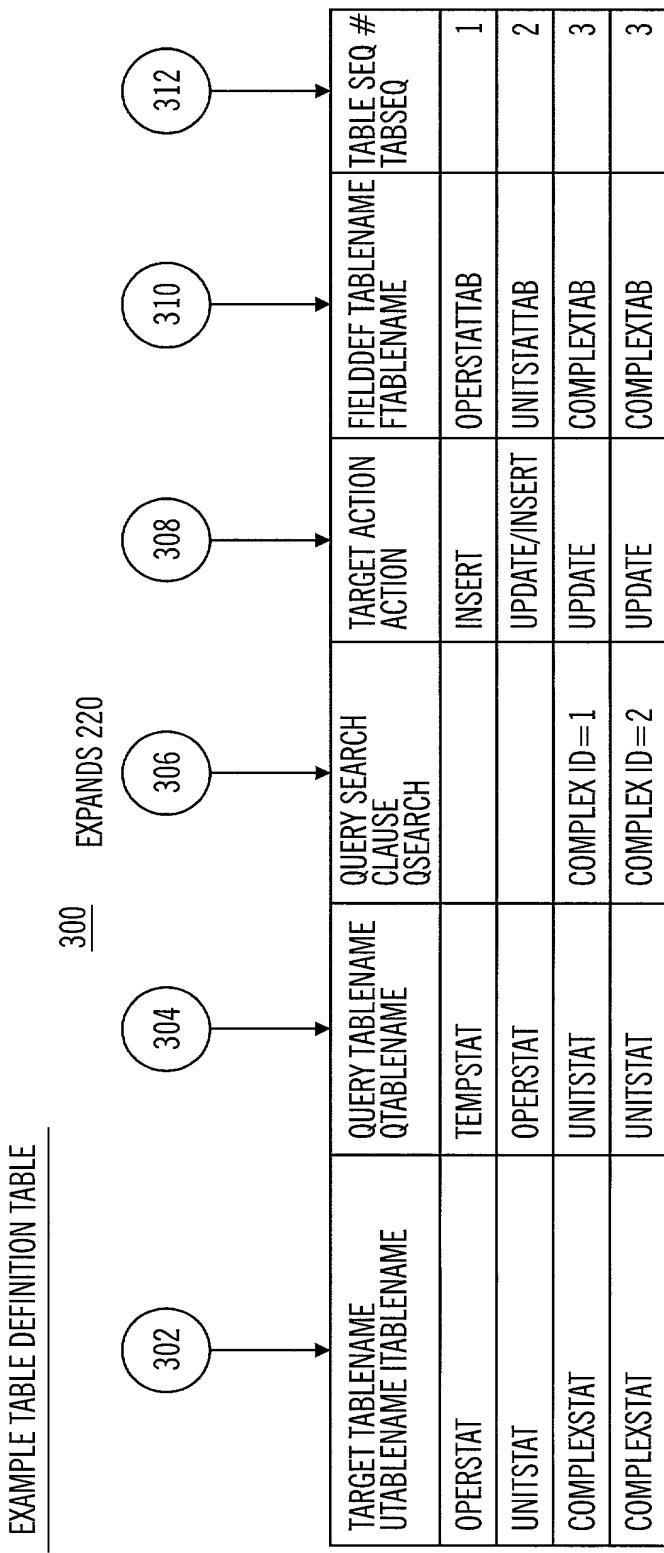


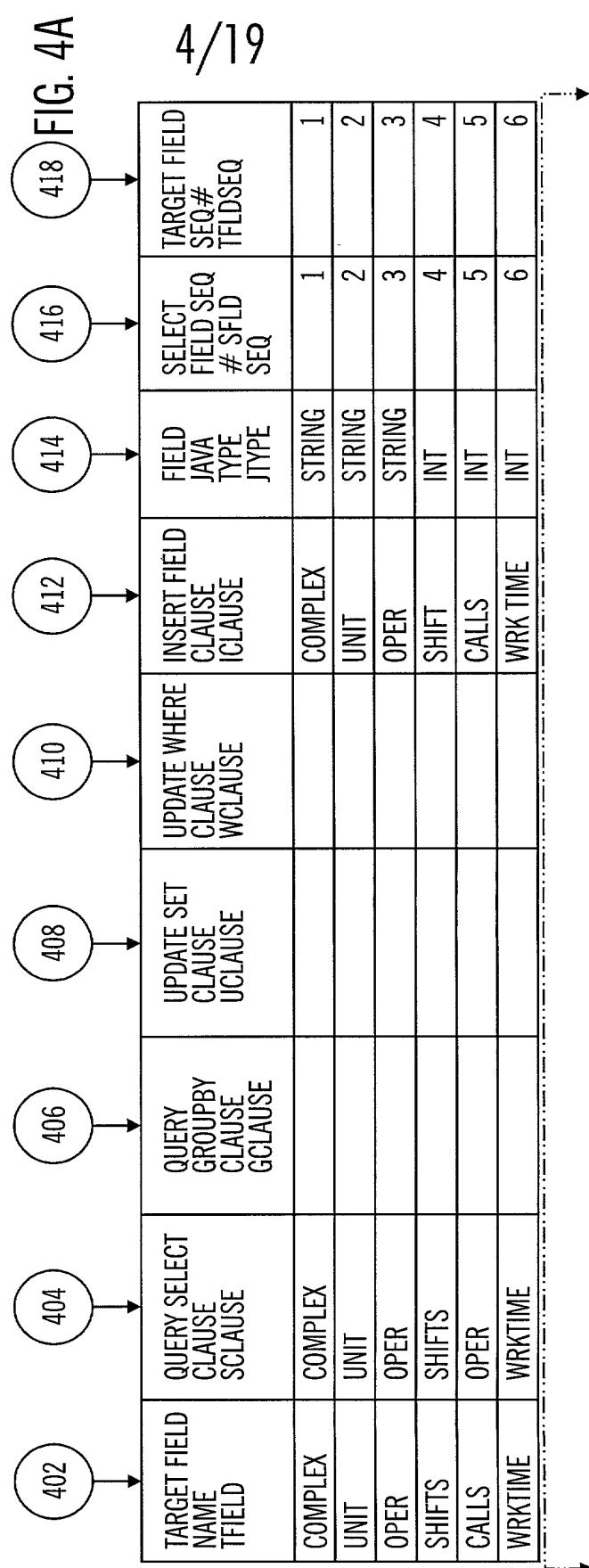
FIG. 3

EXAMPLE FIELD DEFINITION TABLES

FIELD DEFINITION TABLE: OPERSTAT

TARGET FIELD NAME	QUERY SELECT CLAUSE	QUERY GROUPBY CLAUSE	UPDATE SET CLAUSE	UPDATE WHERE CLAUSE	INSERT FIELD CLAUSE	FIELD JAVA TYPE	FIELD TYPE	SELECT FIELD SEQ #	TARGET FIELD SEQ #
TFIELD	SCLAUSE	GCLAUSE	UCLAUSE	WCLAUSE	ICLAUSE	JTYPE	SFLD	SEQ	TFLDSEQ
COMPLEX	COMPLEX				COMPLEX	STRING	1	1	1
UNIT	UNIT				UNIT	STRING	2	2	2
OPER	OPER				OPER	STRING	3	3	3
SHIFTS	SHIFTS				SHIFT	INT	4	4	4
CALLS	CALLS				CALLS	INT	5	5	5
WRKTIME	WRKTIME				WRK TIME	INT	6	6	6

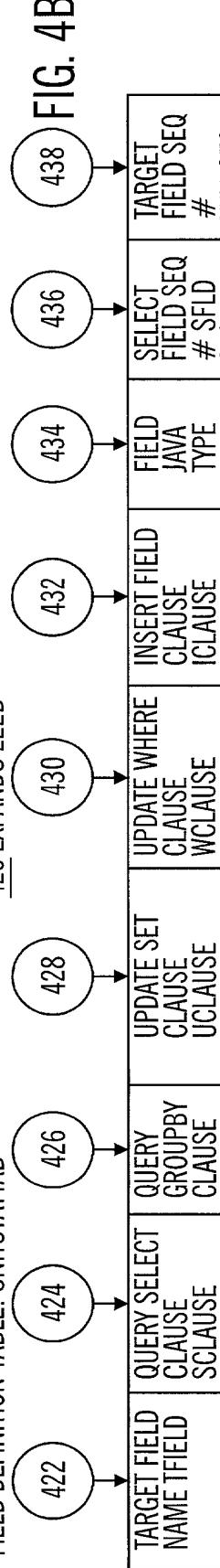
400 EXPANDS 222A



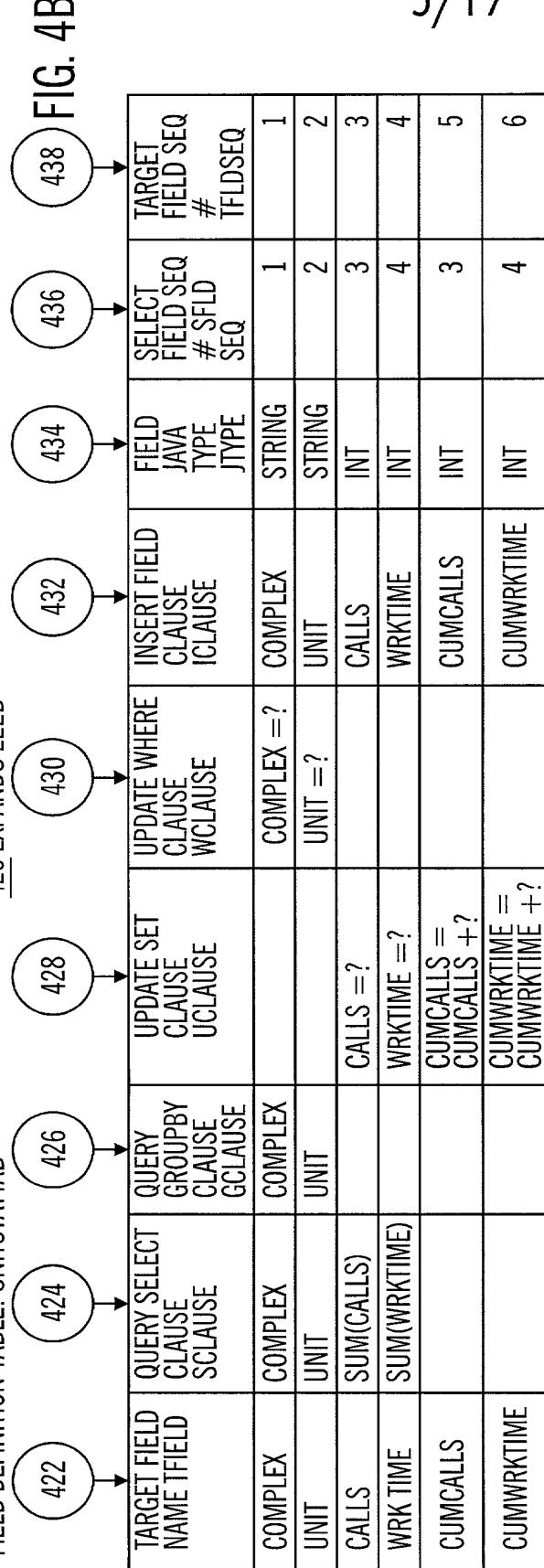
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+

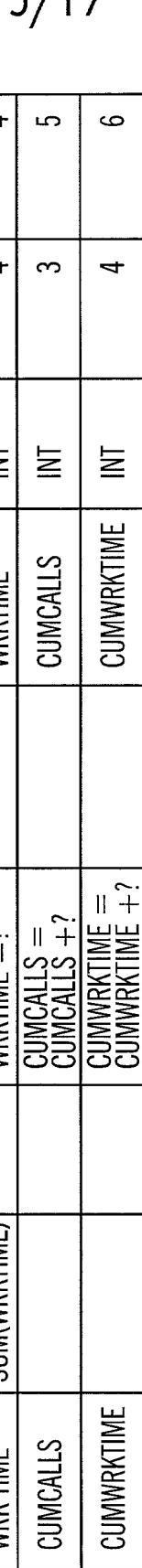
FIELD DEFINITION TABLE: UNITSTATTAB



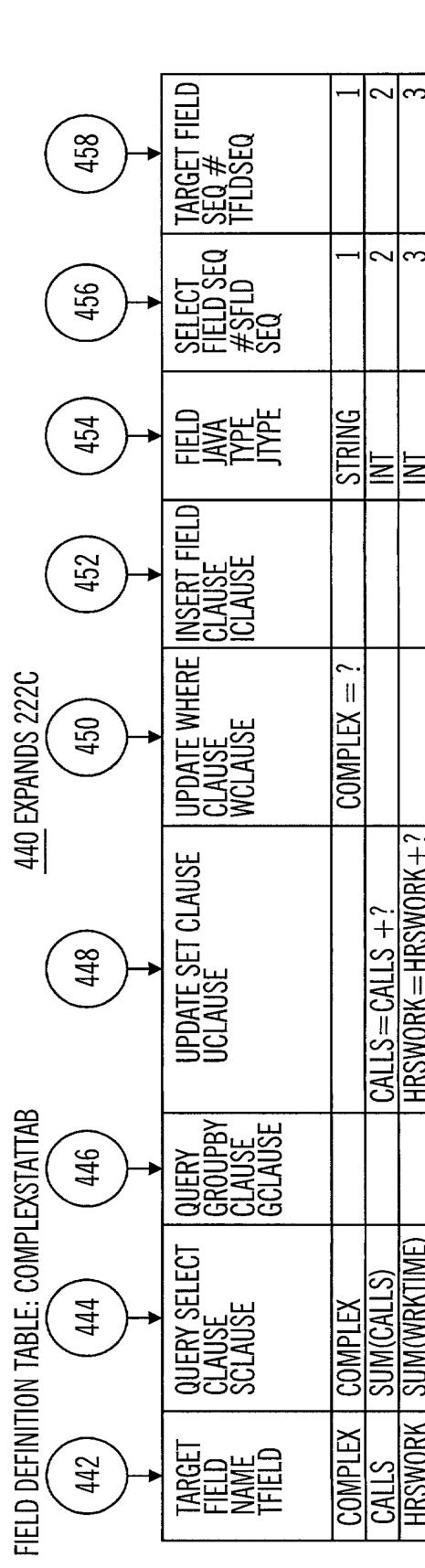
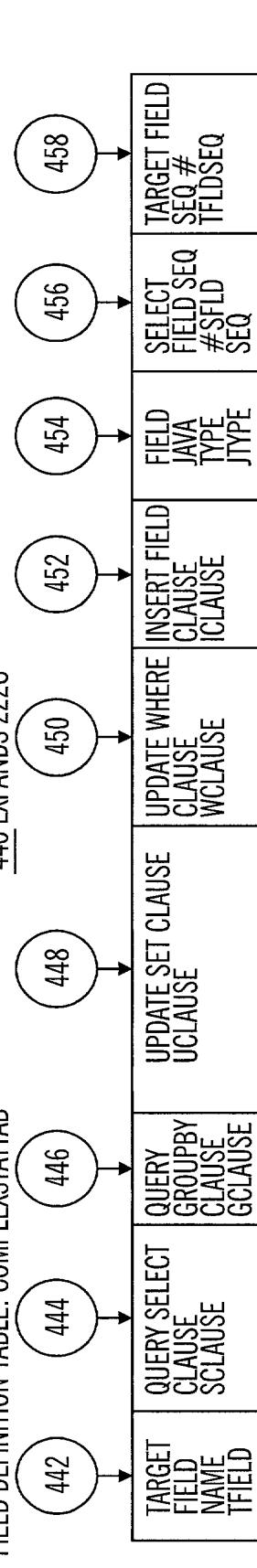
FIELD DEFINITION TABLE: 420 EXPANDS 222B



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FIELD DEFINITION TABLE: COMPLEXSTATTAB



+

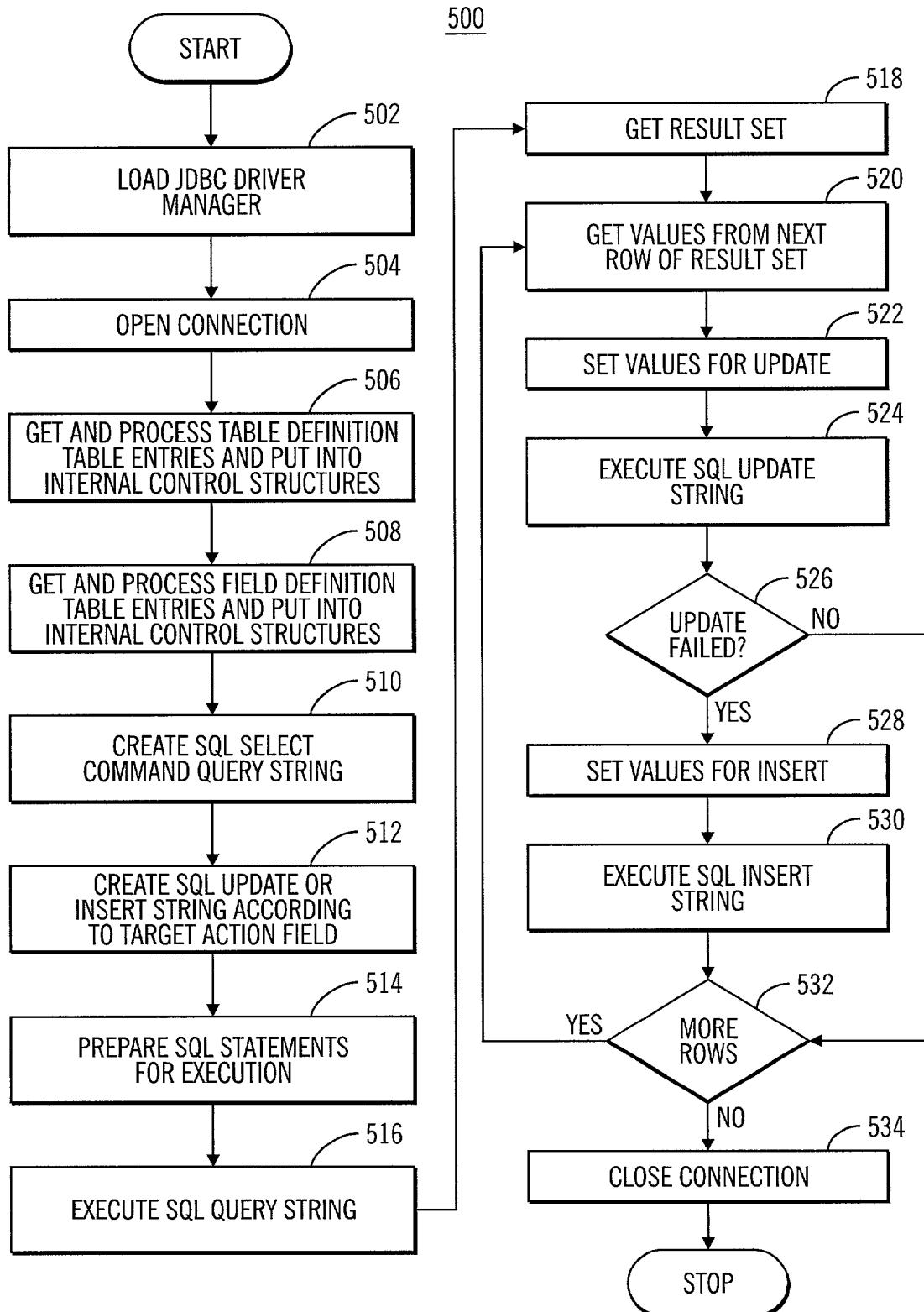


FIG. 5

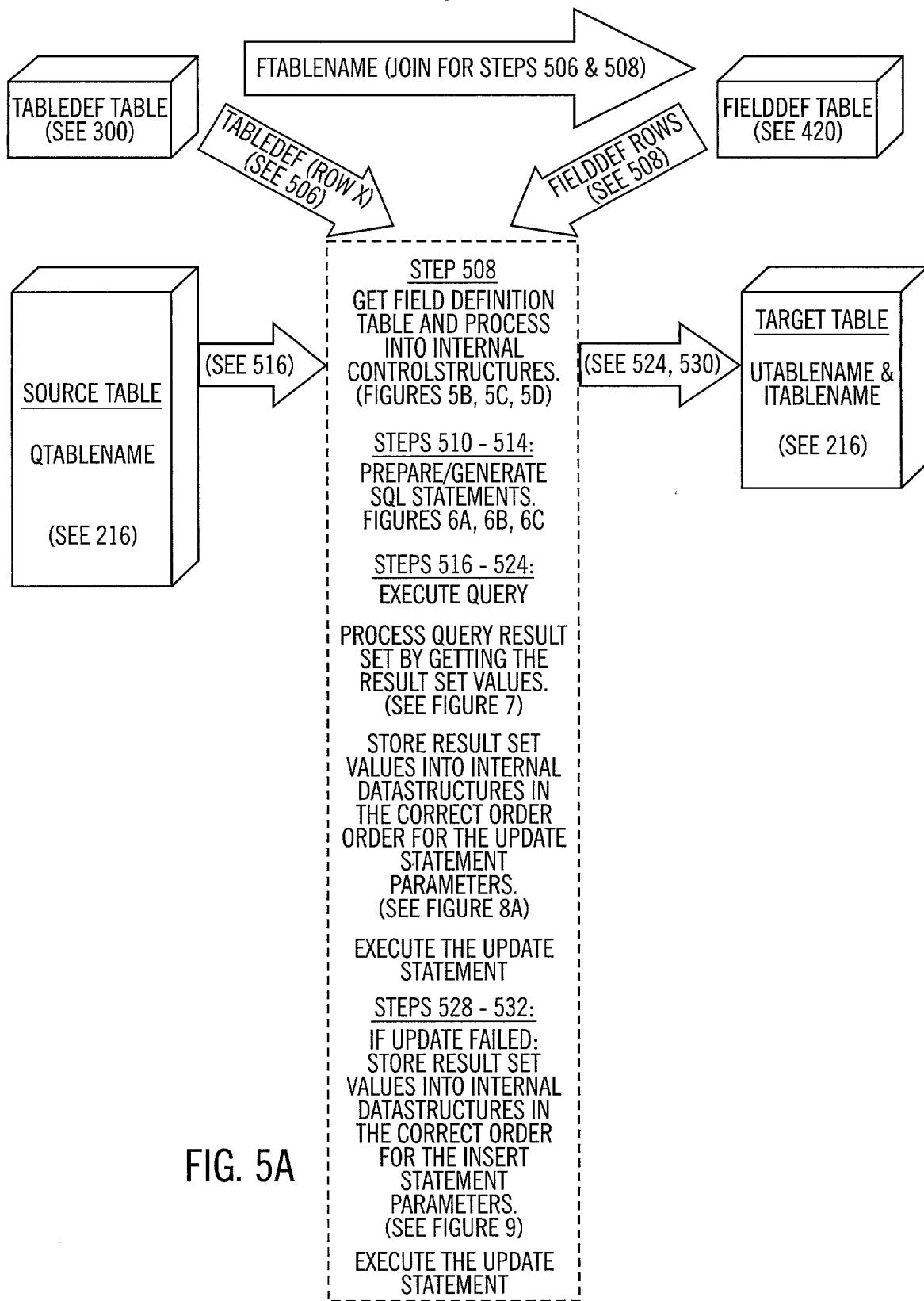


FIG. 5A

Select SCLAUSE, JTYPE, SFLDSEQ FROM UnitStatTab WHERE SCLAUSE is NOT NULL ORDER BY SFLDSEQ

```

i=1
While not end of resultset
{
// Get values from next row of resultset
SClause[i] = GetString [1]           // get SCLAUSE
SJType[i] = GetString [2]            // get JTYPE
SFlSeq[i] = GetInt [3]               // get SFlSeq
i++
}
Ssize = i--:

```

FIG. 5B1

Complex	String	1
Unit	String	2
SUM(Calls)	int	3
SUM(WrkTime)	int	4

RESULT SET

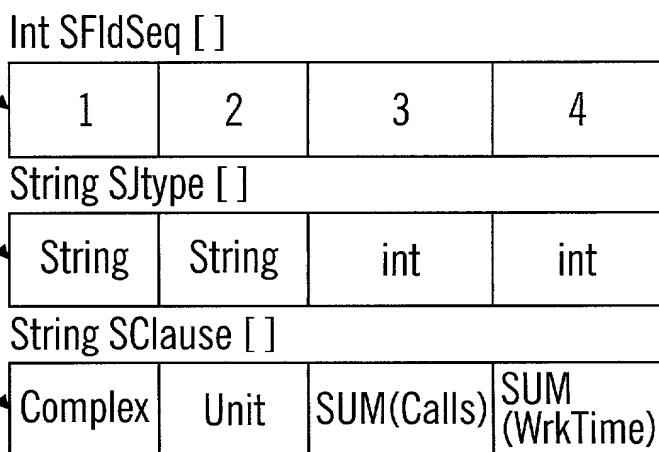


FIG. 5B2

556

Select GCLAUSE, SFLDSEQ FROM UnitStatTab WHERE GCLAUSE is
NOT NULL ORDER BY SFLDSEQ

```

i=1
While not end of resultset
{
// Get values from next row of resultset
GClause[i] = GetString [i]           // get GCLAUSE — 557
i++
}
Gsize = i--:
```

FIG. 5B3

 SELECT GCLAUSE, SFLDSEQ FROM UnitStatTab WHERE GCLAUSE is
NOT NULL ORDER BY SFLDSEQ

SELECT GCLAUSE, SFLDSEQ FROM UnitStatTab WHERE GCLAUSE is
NOT NULL ORDER BY SFLDSEQ

Complex	1
Unit	2

RESULT SET

FIG. 5B4

String GClause []

Complex	Unit
---------	------

SELECT UCLAUSE, JTYPE, SFLDSEQ, TFLDSEQ FROM UnitStatTab WHERE UCLAUSE is NOT NULL ORDER BY TFLDSEQ

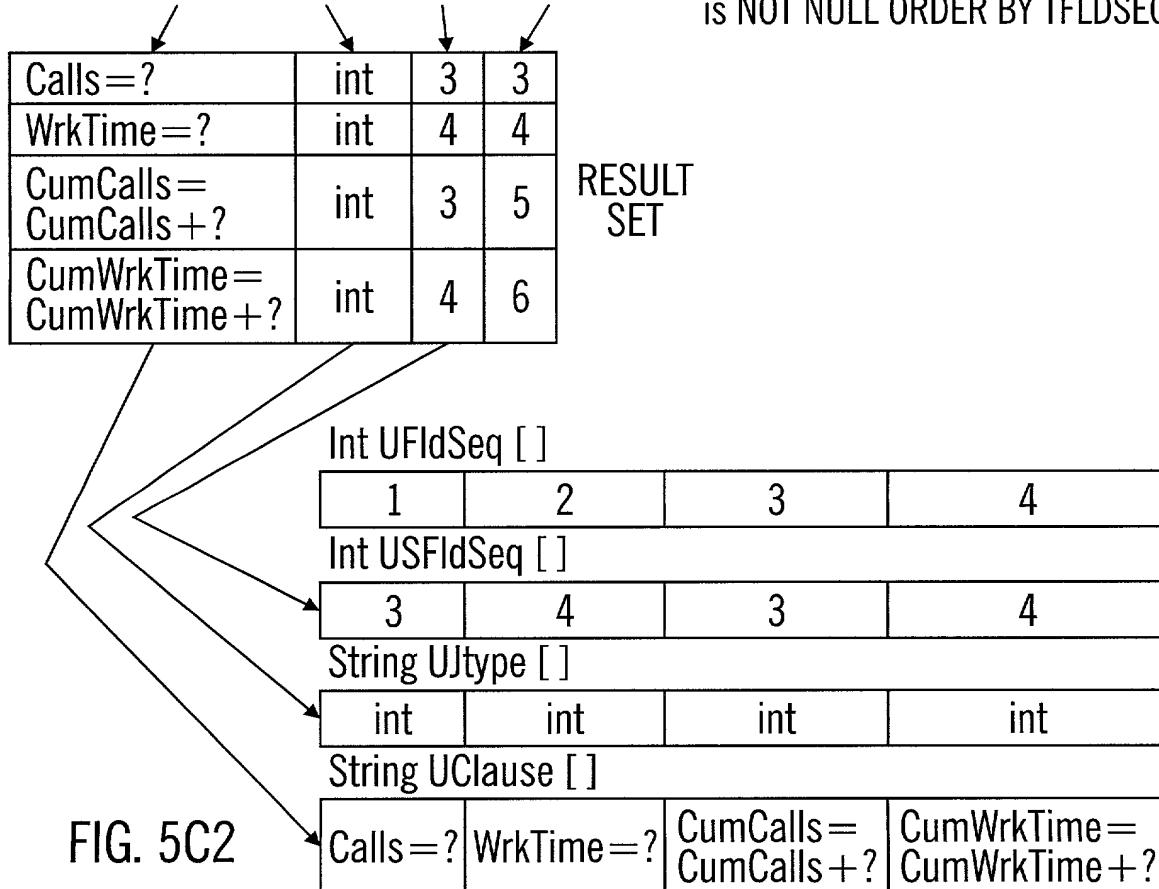
```

i=1
While not end of resultset
{
// Get values from next row of resultset
UClause[i] = GetString [1]           // get UCLAUSE
UJType[i] = GetString [2]           // get JTYPE
USFlSeq[i] = GetInt [3]           // get SFlSeq
UFldSeq[i] = i                     // reset sequence
i++
}
Usize = i--:

```

FIG. 5C1

SELECT UCLAUSE, JTYPE, SFLDSEQ, TFLDSEQ FROM UnitStatTab WHERE UCLAUSE is NOT NULL ORDER BY TFLDSEQ



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SELECT WCLAUSE, SFLDSEQ, TFLDSEQ FROM UnitStatTab WHERE
WCLAUSE is NOT NULL ORDER BY TFLDSEQ

i=1

While not end of resultset

{

// Get values from next row of resultset

WClause[i] = GetString [1] // get WCLAUSE

WJType[i] = GetString [2] // get JTYPE

WSFlSeq[i] = GetInt [3] // get SFlSeq

WFldseq[i] = Usize + i // reset sequence

i++

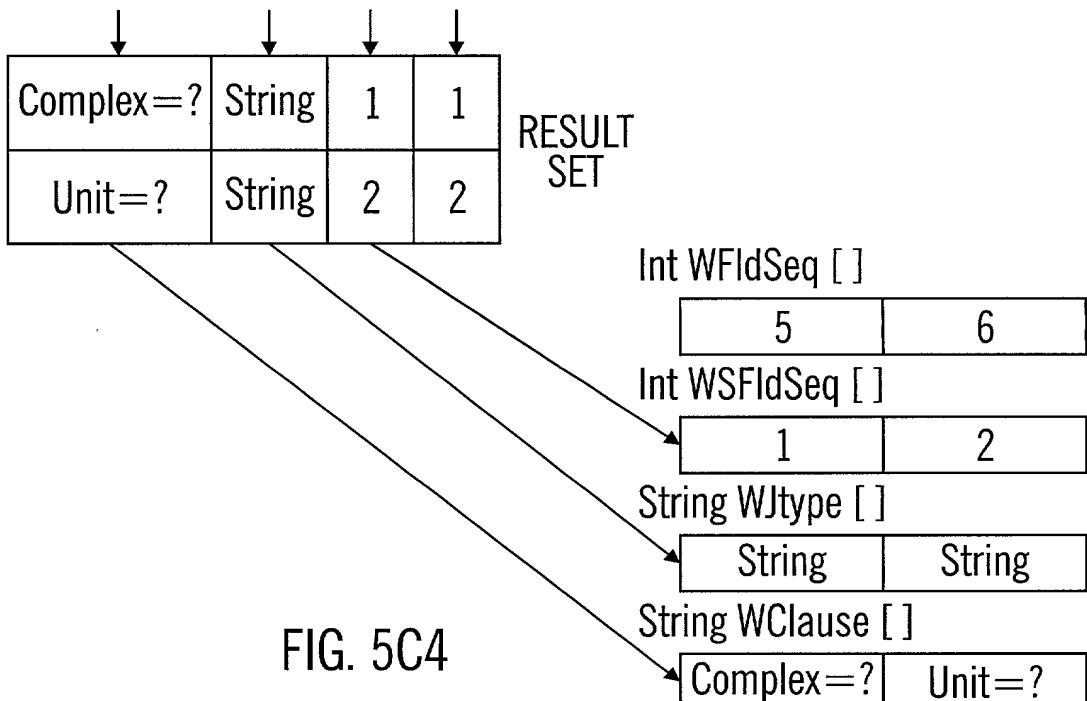
}

Wsize = i--:

575

FIG. 5C3

SELECT WCLAUSE, SFLDSEQ, TFLDSEQ FROM UnitStatTab WHERE WCLAUSE is
NOT NULL ORDER BY TFLDSEQ



SELECT ICLAUSE, JTYPE, SFLDSEQ, TFLDSEQ FROM UnitStatTab WHERE ICLAUSE is NOT NULL ORDER BY TFLDSEQ

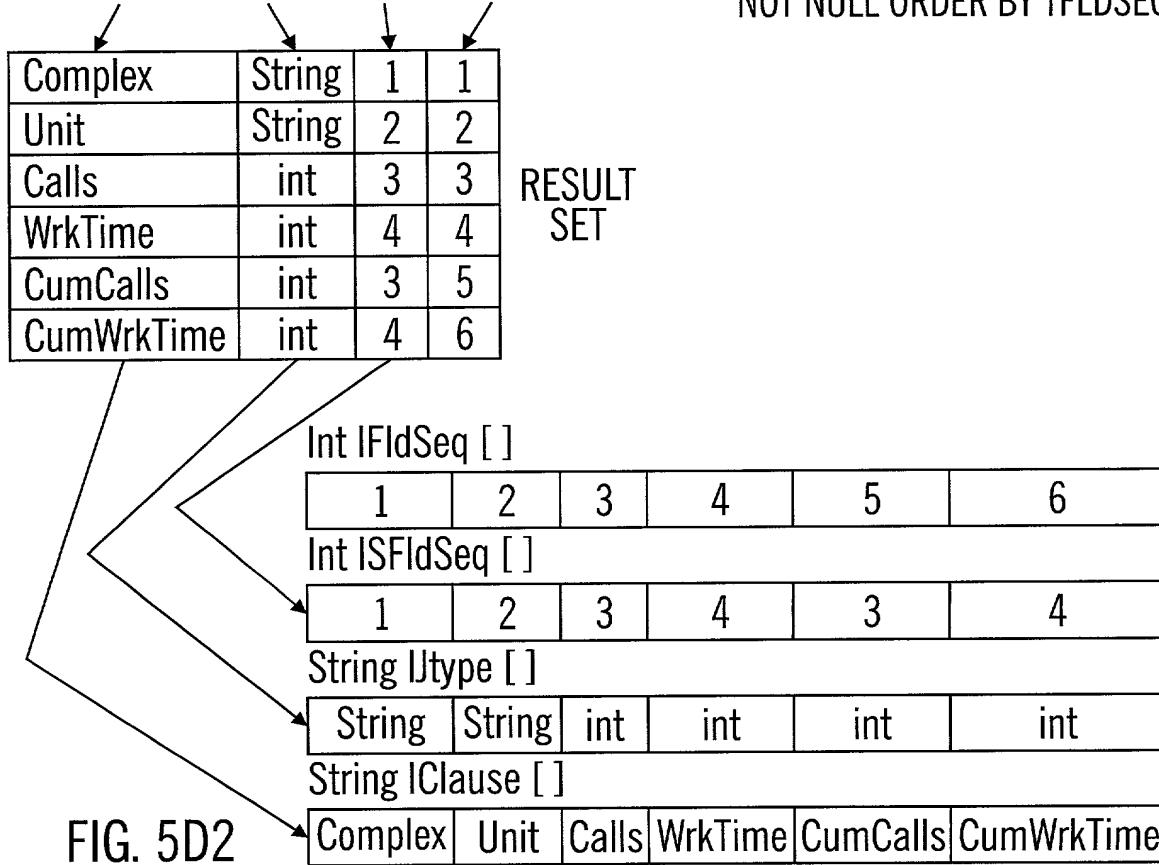
```

i=1
While not end of resultset
{
// Get values from next row of resultset
IClause[i] = GetString [1]           // get ICLAUSE
JType[i] = GetString [2]             // get JTYPE      — 581
ISFlSeq[i] = GetInt [3]              // get SFlSeq
IFlSeq[i] = i                      // reset sequence
i++
}
lsize = i--:

```

FIG. 5D1

SELECT ICLAUSE, JTYPE, SFLDSEQ, TFLDSEQ FROM UnitStatTab WHERE ICLAUSE is NOT NULL ORDER BY TFLDSEQ



Query Statement Syntax:
SELECT -Clause _____

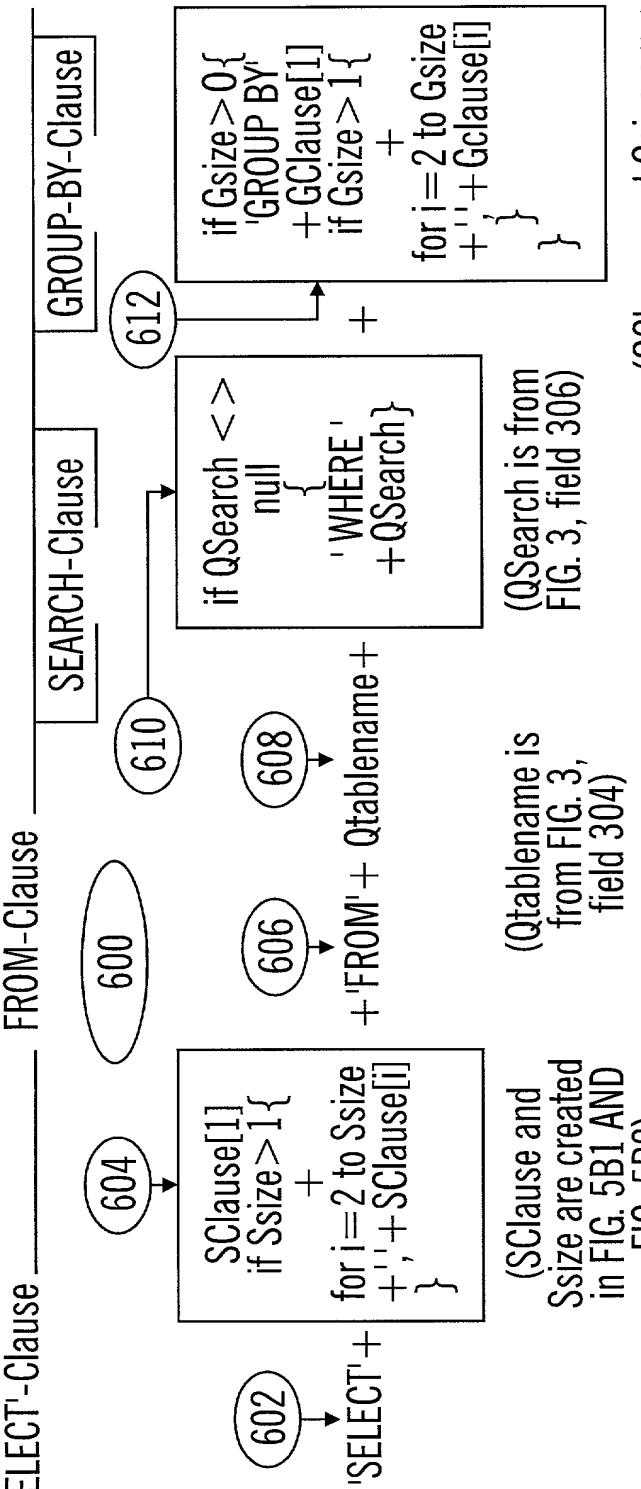


FIG. 6A1

(GClause and Gsize are created in FIG. 5B3 and FIG. 5B4)

(Qtablename is from FIG. 3, field 304) (QSearch is from FIG. 3, field 306)

(SClause and
Ssize are created
in FIG. 5B1 AND
FIG. 5B2)

Select Statement String which was built from 600 above.

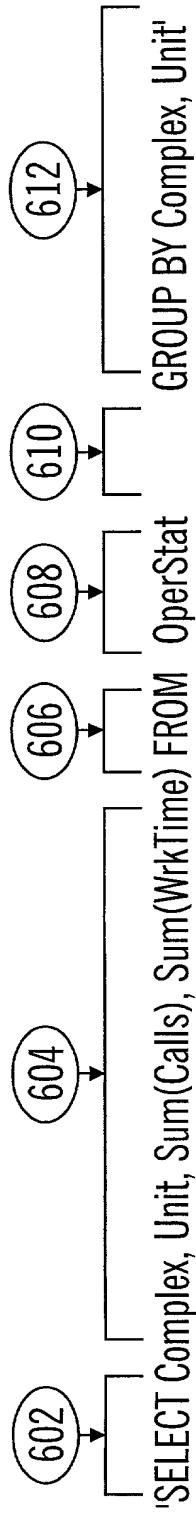


FIG. 6A2

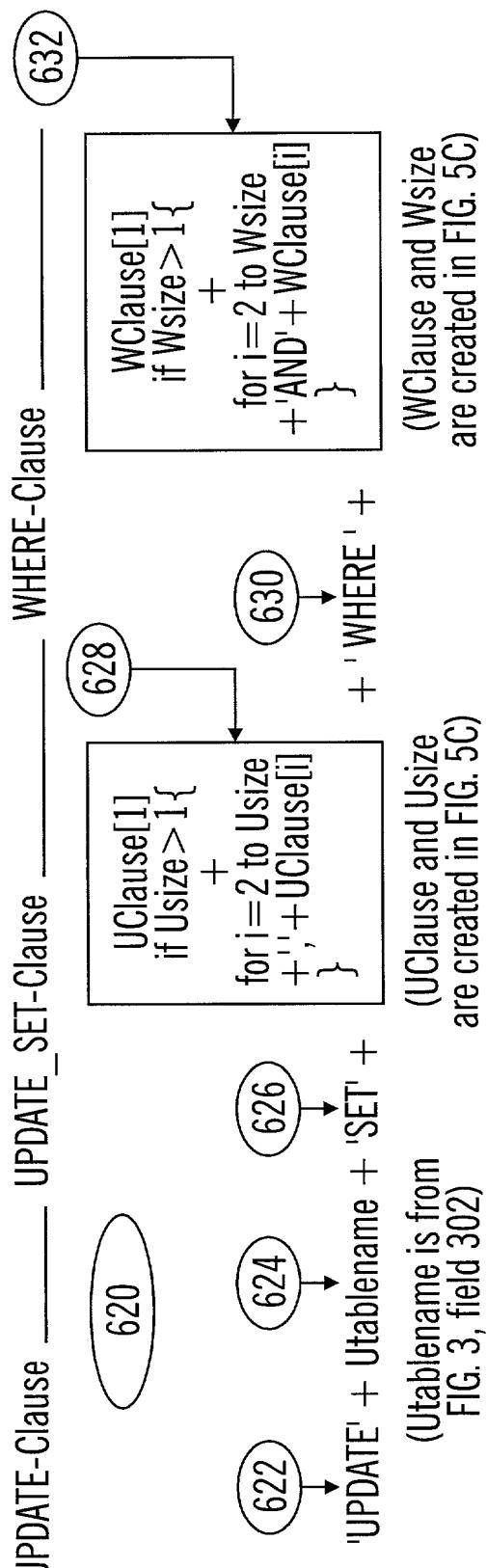


FIG. 6B1

(Utablename is from FIG. 3, field 302)

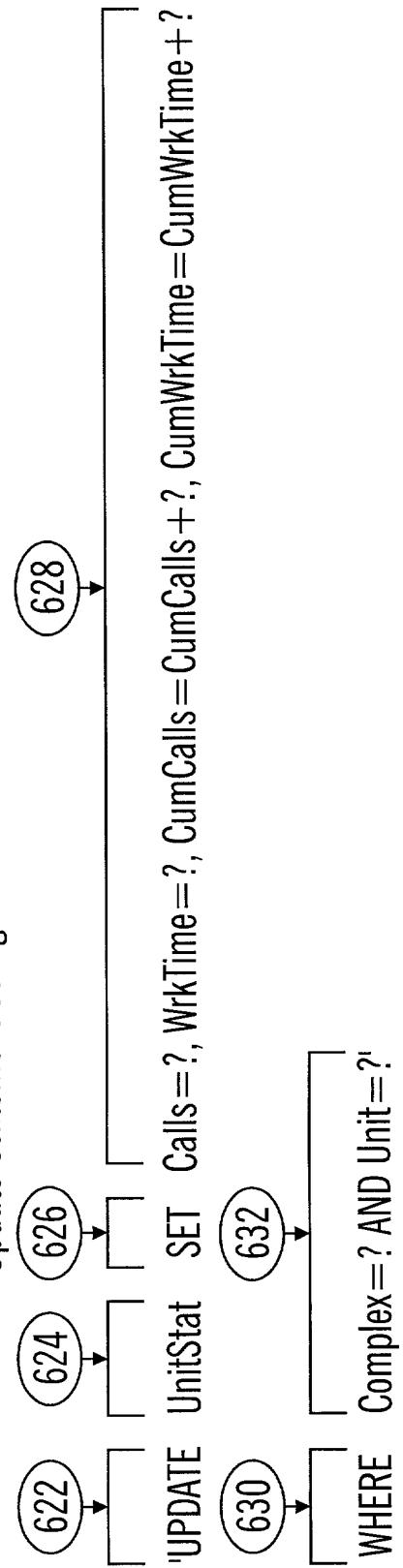
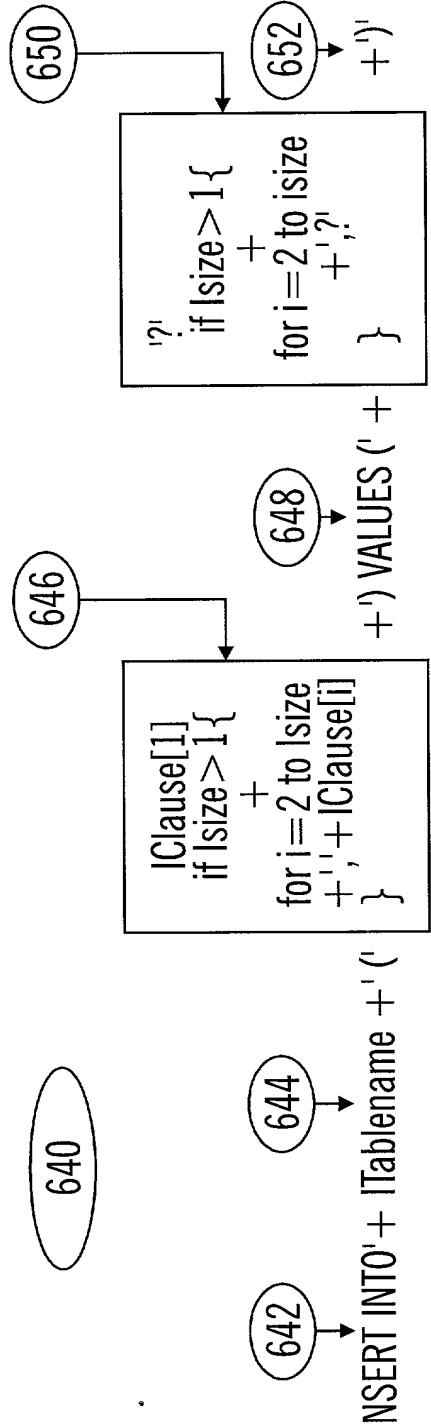


FIG. 6B2

Insert Statement Syntax:
INSERT-Clause _____



(Itablename is from FIG. 3, field 302)
(IClause and Isize are created in FIG. 5D)
(Isize is created in FIG. 5D)

FIG. 6C1

Insert Statement String which was built from 640 above.

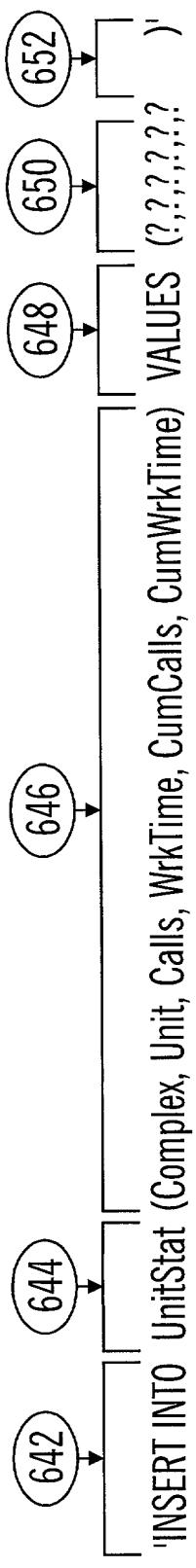


FIG. 6C2

'SELECT Complex, Unit, Sum(Calls), Sum(WrkTime) FROM OperStat
GROUP BY Complex, Unit'

```
For i=1 to Ssize
{
  j=SFlSeq[i]
  if SJType[i]='String'
    StringRS[j]=GetString[i]
  else
    IntRS[j]=GetInt[i]
}
```

FIG. 7A

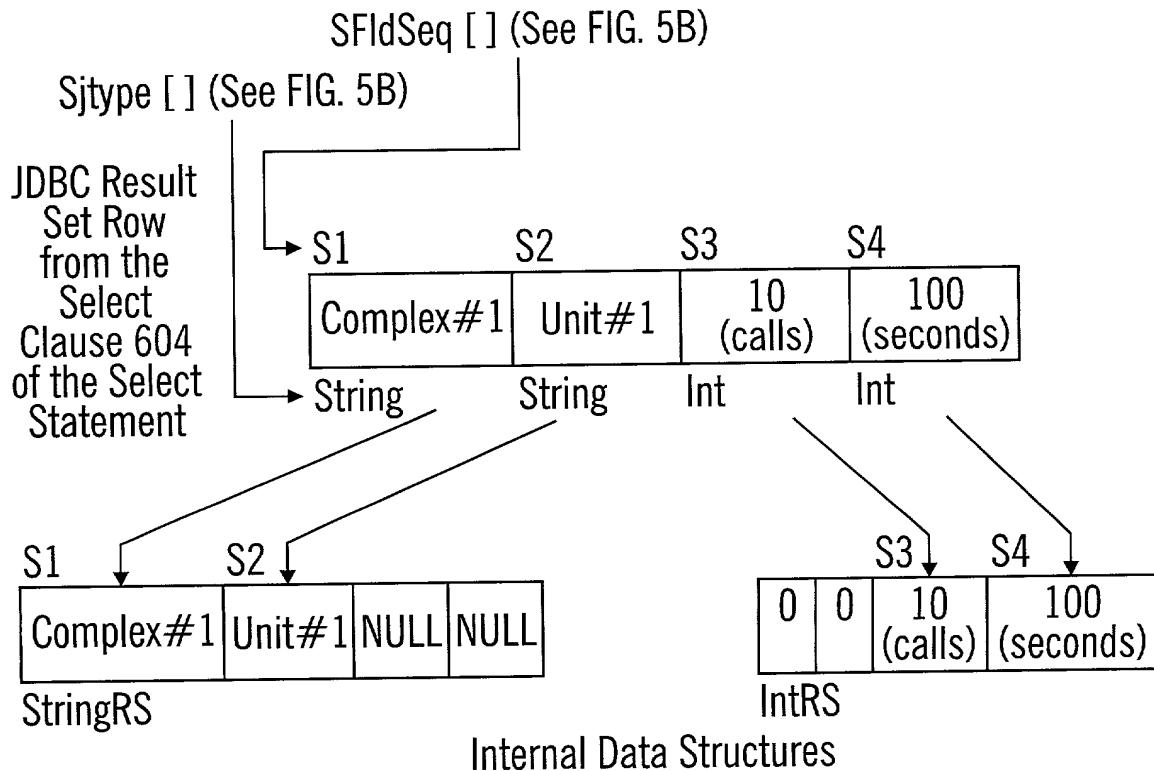


FIG. 7B

```
'UPDATE UnitStat SET Calls=? , WrkTime=? , CumCalls=CumCalls+? ,  
          U1      U2      U3  
          CumWrkTime=CumWrkTime+?  
          U4  
WHERE Complex=? AND Unit=?'  
          U5      U6
```

```

For i=1 to Usize
{
  j=UFldSeq[i]
  k=USFldSeq[i]
  if UJType[i]='String'
    setString[j]=StringRS[k]
  else
    setint[j]=IntRS[k]
}

```

FIG. 8A1

```

For i=1 to Wsize
{
  j=WFldSeq[i]
  k=WSFldSeq[i]
  if WJType[i]='String'
    setString[j]=StringRS[k]
  else
    setint[j]=IntRS[k]
}

```

FIG. 8A2

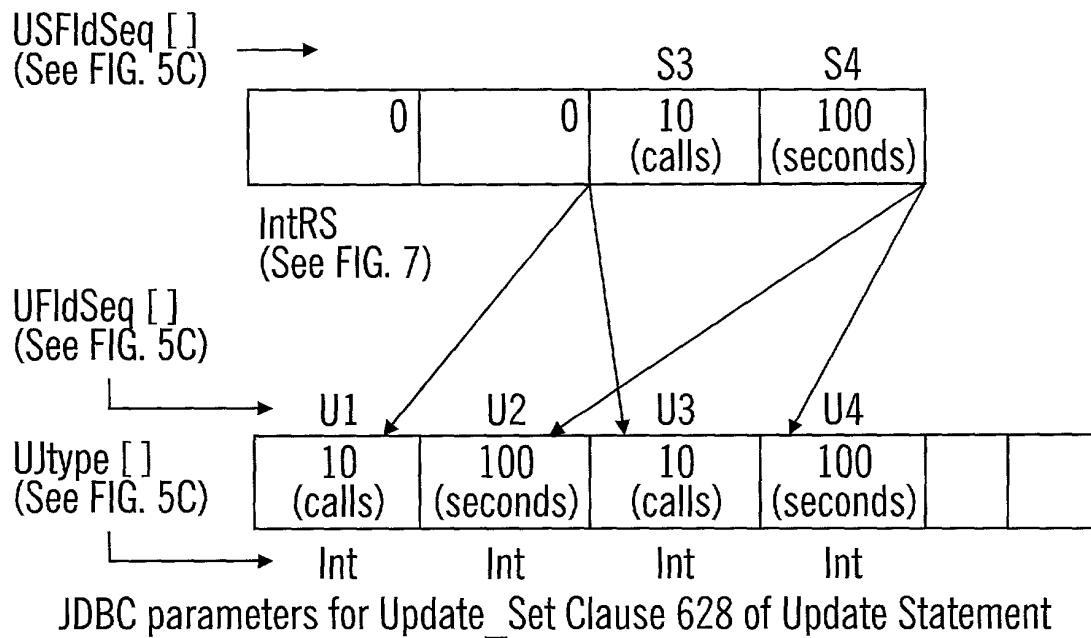


FIG. 8A3

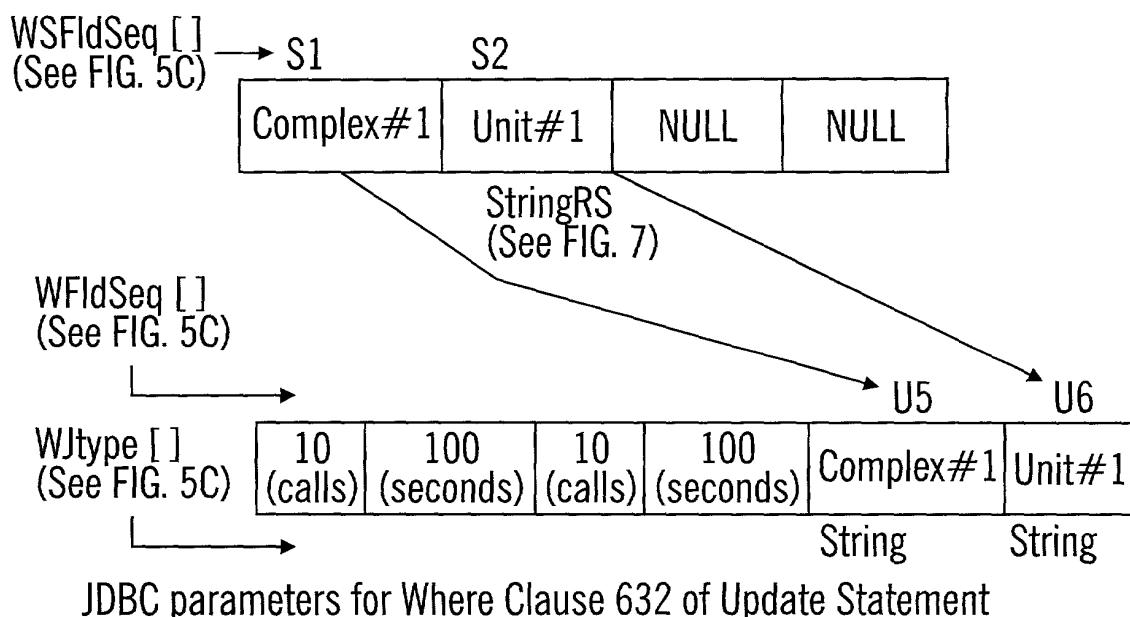


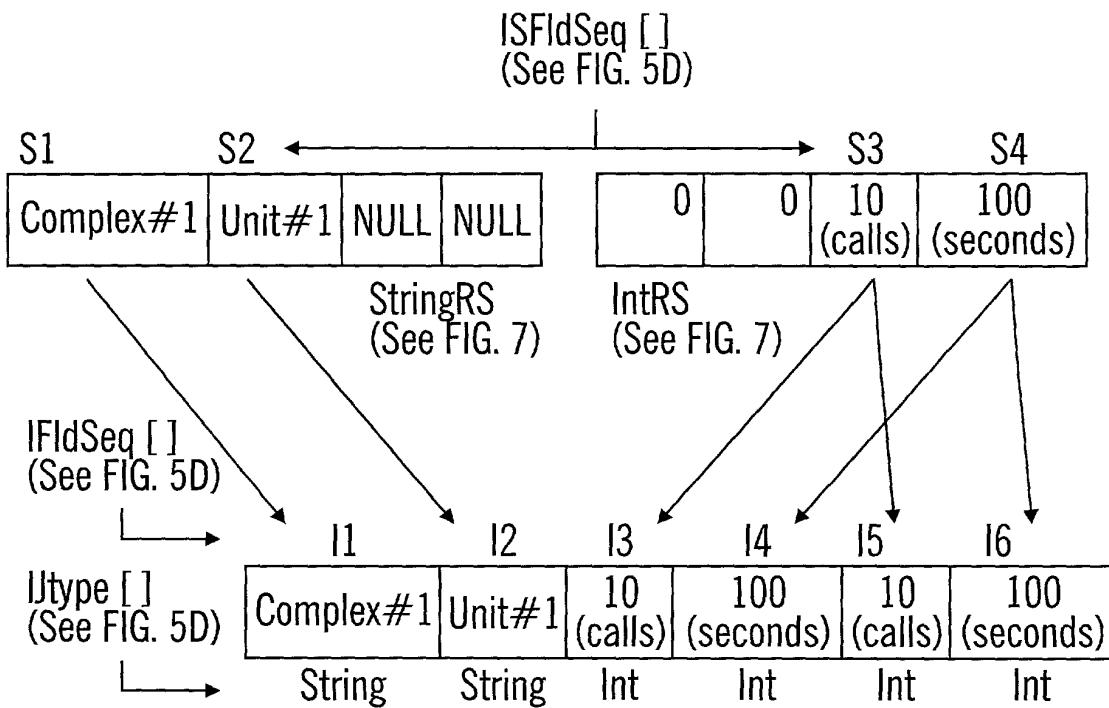
FIG. 8A4

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'INSERT INTO UnitStat(Complex, Unit, Calls, WrkTime, CumCalls, CumWrkTime) VALUES (?,?,?,?,?,?)'
 I1,I2,I3,I4,I5,I6

```
For i=1 to lsize
{
    j=IFldSeq[i]
    k=ISFldSeq[i]
    if IJType[i]='String'
        setString[j]=StringRS[k]
    else
        setint[j]=IntRS[k]
}
```

FIG. 9A



JDBC parameters for Values Clause 650 of Insert Statement

FIG. 9B